IN THE SPECIFICATION:

Please insert the following new paragraph after the Title and before the "TECHNICAL FIELD":

-- RELATED APPLICATION

This application is the U.S. National Phase under 35 U.S.C. § 371 of International Application No. PCT/JP2004/009631, filed on July 7, 2004, which in turn claims the benefit of Japanese Application No. 2003-296233, filed on August 20, 2003, and Japanese Application No. 2003-431918, filed on December 26, 2003, the disclosures of which Applications are incorporated by reference herein. –

Please amend the paragraph beginning on page 15 at line 9 as follows:

The vertically moving mechanism 42 is equipped with delivery means 42a composed of a delivery screw for moving the paired heat seal rolls 41a vertically. As this delivery means 42a rotates, a nut portion 42b can move up and down. This nut portion 42b is equipped with a mounting unit 42c to be connected to a frame body 41e of the paired heat seal rolls 41a. The rotations are transmitted to the delivery ~~member~~ means 42a by vertically moving mechanism drive means 42d composed of a servomotor. A first pulley 42e is mounted on the rotating shaft 42d1 of the vertically moving mechanism drive means 42d, and a second pulley 42f is mounted on the rotating shaft 42a1 of the delivery means 42a. By causing a belt 42g to run between the individual pulleys 42e and 42f, the rotations of the rotating shaft 42d1 of the vertically moving mechanism drive means 42d can be transmitted to the delivery means 42a.

Please amend the paragraph beginning on page 17 at line 5 as follows:

On the other hand, the vertically moving mechanism 62 is equipped with delivery means 62a composed of a delivery screw for moving the support plate 61b vertically. As the delivery means 62a rotates, a nut portion 62b can move up and down. This nut portion 62b is equipped with a mounting portion 62c for moving the support plate 61b up and down according to the vertical movements of the nut portion 62b. The rotations are transmitted to the delivery ~~member~~ means 62a by vertically moving mechanism drive means (i.e., fourth drive means) 62d composed

of a servomotor. A first pulley 62e is mounted on the rotating shaft 62d1 of the vertically moving mechanism driving means 62d, and a second pulley 62f is mounted on the rotating shaft 62a1 of the delivery means 62a. The rotations of the rotating shaft 62d1 of the vertically moving mechanism drive means 62d can be transmitted to the delivery means 62a by causing a belt 62g to run between the individual pulleys 62e and 62f.

Please amend the paragraph beginning on page 19 at line 7 as follows:

With the input/output interface circuit 20d, there are connected as input means: a film delivery state detecting sensor 21 for detecting the rotating state of the top roll 1b composed of the delivery state detecting roller rotated together with the delivery of the film F; a regi-mark detecting sensor 22 for detecting a register mark (as will be called the "regi-mark") M, as shown in Fig. [[6]] 5, to be printed on the film F; setting means 23 made of touch panels for setting and displaying a variety of set values; and a rotation detecting sensor 24 for detecting the rotating state (or the sealing state) of the sealing plates 41b provided to the heat seal rolls 41a of the laterally sealing mechanism 4. Here, each of the detection sensors 21, 22 and 24 is composed of a transmission type sensor or a proximity sensor. The detection sensor 21 is enabled to detecting the rotating state of the top roll 1b by detecting the presence/absence of a slit formed in the top roll 1b or a detection target member. On the other hand, the detection sensor 24 detects the seal plates 41b arranged on the heat seal rolls 41a of the laterally sealing mechanism 4.

Please amend the paragraph beginning on page 21 at line 16 as follows:

In response to a detection signal from the detection sensor 22, the control means 20 controls the drive means 3c of the longitudinally sealing mechanism 3 to establish a film feeding velocity V to be set by the setting means 23. The control means [[22]] 20 decides whether or not the input time period of the detection signal from the detection sensor 22 is inputted for a constant period based on the film feeding velocity V, so that the film F can be fed out at a synchronized velocity by controlling the acceleration/deceleration of the drive means 3c on the basis of the decision result.

Please amend the paragraph beginning on page 24 at line 7 and bridging page 25 as follows:

The control means 20 controls, on the basis of the drive waveform S1, the drive means 41c in the rotating mechanism 41 of the laterally sealing mechanism 4 so that the film (or the bag forming film F) F is laterally sealed (or heat-sealed) by the seal plates 41b arranged on the heat seal rolls 41a, and controls the vertically moving mechanism drive means 42d of the vertically moving mechanism 42 of the laterally sealing mechanism 4, as shown in Fig. 5(b). Fig. 5(b) shows a drive waveform S2 of the vertically moving mechanism drive means 42d of the laterally sealing mechanism 4. The control means 20 starts the downward movement of the vertically moving mechanism 42 earlier than the seal timing by the laterally sealing mechanism 4 (i.e., the timing to clamp the film F with the seal plates 41b), and controls the vertically moving mechanism drive means 42d of the vertically moving mechanism 42 so that the synchronous state may be established before the seal timing (as referred to Fig. 6(a)) by the seal plates 41b. After the end of the laterally seal in the synchronous state (i.e., on and after the sealing state C of Fig. 6(a)), the control means 20 further controls the vertically moving mechanism drive means 42d of the vertically moving mechanism 42 so that the upward moving action of the vertically moving mechanism 42 may be started to return the vertically moving mechanism 42 to the original position. The downward velocity V2 of the vertically moving mechanism 42 is so set that the sum (V1 + V2) of itself and the rotating circumferential velocity V1 of the seal plates [[1]] 41b may be larger than the film feeding velocity V or may not be smaller than the film feeding velocity [[Va]] V. Here, the upward velocity V3 of the vertically moving mechanism 42 may be in time for the timing, at which the position to have the next regi-mark M formed is laterally sealed.

Please amend the paragraph beginning on page 25 at line 22 and bridging page 26 as follows:

Next, the cutting method of the cutting mechanism 6 is described. Here, Fig. 6(b) shows the motions of the cutting mechanism 6 in synchronism with the vertical movements of the sealing mechanism 4. In Fig. 6(b): arrow D indicates the downward/upward motions of the film holding-cutting mechanism 61; arrow E indicates the opening/closing motions of the paired film

holding plates 61a; and arrow F indicates the forward/backward motions of the blade 61e of the film ~~cutting~~ holding-cutting mechanism 61.

Please amend the paragraph beginning on page 27 at line 1 as follows:

In synchronism with the drive waveform S2 of the vertically moving mechanism drive means 42d in the vertically moving mechanism 42 of the laterally sealing mechanism 4, moreover, the control means 20 controls the vertically moving mechanism drive means 62d in the vertically moving mechanism 62 of the cutting mechanism 6. Fig. 5(d) shows a drive waveform S4 for driving the vertically moving mechanism drive means 62d in the vertically moving mechanism 62 of the cutting mechanism 6. In synchronism with the timing, at which the downward movement of the vertically moving mechanism 42 of the laterally sealing mechanism 4 is started, the control means 20 starts (as indicated by the arrow D of Fig. 6(b)) the downward movement of the vertically moving mechanism 62 of the cutting mechanism 6. The control means 20 controls the vertically moving mechanism drive means 62d of the vertically moving mechanism 62 so that the synchronous state may be established before the timing, at which the film F is clamped by the paired film holding plates 61a of the film holding-cutting mechanism 61. A downward velocity V4 at this time is substantially equal to the film feeding velocity [[Va]] V.

Please amend the paragraph beginning on page 29 at line 2 as follows:

Here, the control means 20 determines the cutting timing on the basis of a mechanically structural distance L3 from the arranged position of the regi-mark detection sensor 22 to the position to be cut by the cutting mechanism 6, the size L2 of the packaging bag P, and the film feeding velocity [[Va]] V. Moreover, the distance L3 is the parameter which is mechanically structurally predetermined.

Please amend the paragraph beginning on page 32 at line 17 and bridging page 33 as follows:

The vertically filling-packaging device further comprises the drive means 41c for rotationally driving the heat seal rolls 41a of the laterally sealing mechanism 4, and the vertically moving mechanism drive means 42d for rotationally driving the delivery screw belonging to the

vertically moving mechanism 42 of the laterally sealing mechanism 4. The control means 20 sets the sum (V1 + V2) and the film feeding velocity V substantially equal to each other, in case the seal plates 41b belonging to the heat seal rolls 41a of the ~~longitudinally~~ laterally sealing mechanism 4 has the rotating circumferential velocity V1 and in case the heat seal rolls [[41b]] 41a of the vertically moving mechanism 42 of the ~~longitudinally~~ laterally sealing mechanism 4 has the downward velocity V2. This setting eliminates disadvantages such as the formation of wrinkles at the time of laterally sealing the film F being continuously delivered, the distortion of the packaging shape, as might otherwise be caused when the film F is pulled, or the dispersion of the cutting position of the cutting mechanism 6 arranged at the latter stage.

Please amend the paragraph beginning on page 34 at line 17 and bridging page 35 as follows:

Moreover, the cutting mechanism 6 causes the film holding plates 61a to perform the opening actions and the upward moving actions of the film holding plates 61a along the shape of the packaging bag series RP having the laterally sealed portions FW to be cut next, so that the film ~~clamping~~ holding plates 61a can be moved along the shape of the packaging bag series RP without any contact with the packaging bag series RP. It is, therefore, possible to shorten the cycle time of the cutting mechanism 6 thereby to improve the productivity of the vertically filling-packaging device H for obtaining the packaging bag P of the large capacity.

Please amend the paragraph beginning on page 35 at line 4 as follows:

In the embodiment of the invention, the respective vertically moving mechanisms 42 and 62 of the laterally sealing mechanism 4 and the cutting mechanism [[5]] 6 are so constructed as to be driven independently of each other. However, the invention may also use a cam mechanism for acting in synchronism with the vertical movements of the laterally sealing mechanism 4.

Please amend the paragraph beginning on page 36 at line 3 and bridging page 37 as follows:

Moreover, the embodiment of the invention is exemplified by the case, in which the film F having the regi-mark M formed is used to form the laterally sealed portion FW at the position having the regi-mark M formed, but can also be applied to the case using the film F having no

regi-mark M. In the control method of the laterally sealing mechanism 4 of this case, the rotating circumferential velocity V1 of the seal plates 41b is determined on the basis of the film feeding velocity V, the size L2 of the packaging bag and the spacing between the plural seal plates 41b arranged to the heat seal rolls [[41b]] 41a, and the rotations of the heat seal rolls 41a are controlled with reference to the detection signal coming from the rotation detection sensor 24 for detecting the rotating states of the seal plates 41b of the laterally sealing mechanism 4. In the method for controlling the cutting mechanism 6, on the other hand, the cutting timing of the cutting mechanism 6 is determined on the basis of the film feeding velocity V, the size L2 of the packaging bag, and the mechanically structural distance from the laterally sealing position by the laterally sealing mechanism 4 to the cutting position by the cutting mechanism 6, so that the film holding-cutting mechanism 61 in the cutting mechanism 6 is controlled with reference to the detection signal coming from the rotation detection sensor 24 for detecting the rotating state of the seal plates 41b of the laterally sealing mechanism 4. In the control method of the vertically moving mechanism 62 of the cutting mechanism 6, on the other hand, the control is synchronized with the vertically moving mechanism 42 of the laterally sealing mechanism 4.